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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/752,469 | 01/06/2004 | John T. Willig | 4899-00001 | 4915 |
| 26753 | 7590 | 04/11/2006 | EXAMINER | |
| ANDRUS, SCEALES, STARKE & SAWALL, LLP 100 EAST WISCONSIN AVENUE, SUITE 1100 MILWAUKEE, WI 53202 | | | STAICOVICI, STEFAN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1732 | |

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/752,469

Applicant(s)

WILLIG ET AL.

Examiner

Stefan Staicovici

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/6/04;10/22/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
2. Claims 1-5, 7-10, 12-15 and 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Tabor *et al.* (US Patent No. 6,989,065 B2).

Regarding claims 1, 10, 12 and 19, Tabor *et al.* ('065) teach the claimed process for making a hollow reinforced urethane product (RFT support) (pipe section) having an inner layer, an outer layer and a reinforcing layer, said process including, providing a woven (braided) reinforcing material having a cylindrical shape, placing said reinforcing material into a mold, injecting a urethane elastomeric material into said mold, forcing said urethane elastomeric material through said reinforcement and curing said urethane elastomeric material to form said hollow reinforced urethane product (RFT support) (see col. 2, line 65 through col. 3, line 10 and col. 5, lines 50-55).

In regard to claims 2-3 and 13, Tabor *et al.* ('065) teach a carbon fiber, woven reinforcement sheet (see col. 8, lines 40-45 and col. 9, lines 40-45).

Specifically regarding claims 4-5 and 17-18, Tabor *et al.* ('065) teach applying a sizing compound to said reinforcement prior to placing said reinforcement in said mold (see col. 9, lines 23-37).

Regarding claims 7-8 and 14-15, Tabor *et al.* ('065) teach both injection molding (positive pressure) (see col. 4, lines 1-10) and rotational molding (see col. 16, lines 7-43). It is noted that the axis of rotation Tabor *et al.* ('065) is horizontal when viewed at 90°.

In regard to claim 9 and further regarding claim 15, Tabor *et al.* ('065) teach thermal curing, hence it is submitted that Tabor *et al.* ('065) teach an external heat source (see col. 5, lines 60-64).

Specifically regarding claims 20-21, Tabor *et al.* ('065) teach wrapping said reinforcement about a mandrel and applying a sizing solution (see col. 8, lines 56-57 and col. 9, lines 7-47).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabor *et al.* (US Patent No. 6,989,065 B2).

Tabor *et al.* ('065) teach the basic claimed process as described above.

Regarding claims 6 and 22, although Tabor *et al.* ('065) teach an adhesive, sizing solution, Tabor *et al.* ('065) do not teach an epoxy. However, the use of epoxy as an adhesive is well known. Therefore, it would have been obvious for one of ordinary skill in the art provide an epoxy adhesive as a sizing solution in the process of Tabor *et al.* ('065) because of known advantages such as high shelf life, well known characteristics, cost and also because Tabor *et al.* ('065) teach an adhesive, sizing solution, hence suggesting an epoxy.

5. Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabor *et al.* (US Patent No. 6,989,065 B2) in view of Rossi (US Patent No. 4,562,031).

Tabor *et al.* ('065) teach the basic claimed process as described above.

Regarding claims 11 and 16, although Tabor *et al.* ('065) teach a urethane product, Tabor *et al.* ('065) do not teach a durometer hardness of 70-A and 70-D. Rossi ('031) teaches that a urethane product for tires has a durometer of 90-A to 50-D (see col. 2, lines 63-66). Therefore, it would have been obvious for one of ordinary skill in the art to form a urethane product for tires having a durometer of 90-A to 50-D as taught by Rossi ('031) using the process of Tabor *et al.* ('065) because, Rossi ('031) specifically teaches that a urethane product for tires has a durometer of 90-A to 50-D in order to function as described, hence providing for an improved product and also because, both references teach similar materials and end-products, hence it is submitted that similar material properties are required for the end-products of Tabor *et al.* ('065) and Rossi ('031).

6. Claims 1-10, 12-15 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rusche (US Patent No. 6,716,384 B2) in view of Tabor *et al.* (US Patent No. 6,989,065 B2).

Rusche ('384) teaches the claimed rotational molding process for making a hollow urethane product (pipe section) including, injecting a urethane elastomeric material into said mold, rotating said mold and curing said urethane material to form said hollow urethane product (see col. 4, lines 60-66).

Regarding claims 1, 10, 12 and 19, Rusche ('384) does not teach reinforcement. Tabor *et al.* ('065) teach a process for making a hollow reinforced urethane product (RFT support) (pipe section) having an inner layer, an outer layer and a reinforcing layer, said process including, providing a woven (braided) reinforcing material having a cylindrical shape, placing said reinforcing material into a mold, injecting a urethane elastomeric material into said mold, forcing said urethane elastomeric material through said reinforcement and curing said urethane elastomeric material to form said hollow reinforced urethane product (RFT support) (see col. 2, line 65 through col. 3, line 10 and col. 5, lines 50-55). Therefore, it would have been obvious for one of ordinary skill in the art to have provided the reinforcement of Tabor *et al.* ('065) in the process of Rusche ('384) because of known advantages that a reinforcement provides such as increased mechanical and chemical properties, hence providing for an improved product. It is noted that Rusche ('384) teach forming a hollow product having a plurality of layers (see col. 6, lines 38-48), hence it is submitted that said hollow product includes an inner layer and an outer layer.

In regard to claims 2-3 and 13, Tabor *et al.* ('065) teach a carbon fiber, woven reinforcement sheet (see col. 8, lines 40-45 and col. 9, lines 40-45). Therefore, it would have been obvious for one of ordinary skill in the art to have provided the woven, carbon fiber reinforcement of Tabor *et al.* ('065) in the process of Rusche ('384) because of known advantages that a reinforcement provides such as increased mechanical and chemical properties, hence providing for an improved product.

Specifically regarding claims 4-5 and 17-18, Tabor *et al.* ('065) teach applying a sizing compound to said reinforcement prior to placing said reinforcement in said mold (see col. 9, lines 23-37). Therefore, it would have been obvious for one of ordinary skill in the art to have provided the reinforcement of Tabor *et al.* ('065) in the process of Rusche ('384) because of known advantages that a reinforcement provides such as increased mechanical and chemical properties, hence providing for an improved product.

Regarding claims 7-8 and 14-15, Rusche ('384) teaches rotational molding, whereas Tabor *et al.* ('065) teach injection molding (positive pressure) (see col. 4, lines 1-10) and rotational molding (see col. 16, lines 7-43) as equivalent alternatives (see col. 5, lines 15-35). It is noted that the axis of rotation Tabor *et al.* ('065) is horizontal when viewed at 90°. Therefore, it would have been obvious for one of ordinary skill in the art to use an injection molding process as taught by Tabor *et al.* ('065) as an equivalent alternative to the rotational molding process of Rusche ('384) because, Tabor *et al.* ('065) specifically teach injection molding (positive pressure) (see col. 4, lines 1-10) and rotational molding (see col. 16, lines 7-43) as equivalent alternatives (see col. 5, lines 15-35).

In regard to claim 9 and further regarding claim 15, Tabor *et al.* ('065) teach thermal curing, hence it is submitted that Tabor *et al.* ('065) teach an external heat source (see col. 5, lines 60-64).

Specifically regarding claims 20-21, Tabor *et al.* ('065) teach wrapping said reinforcement about a mandrel and applying a sizing solution (see col. 8, lines 56-57 and col. 9, lines 7-47). Therefore, it would have been obvious for one of ordinary skill in the art to have provided the reinforcement of Tabor *et al.* ('065) in the process of Rusche ('384) because of known advantages that a reinforcement provides such as increased mechanical and chemical properties, hence providing for an improved product.

Regarding claims 6 and 22, although Rusche ('384) in view of Tabor *et al.* ('065) teach an adhesive, sizing solution, Rusche ('384) in view of Tabor *et al.* ('065) do not teach an epoxy. However, the use of epoxy as an adhesive is well known. Therefore, it would have been obvious for one of ordinary skill in the art provide an epoxy adhesive as a sizing solution in the process of Rusche ('384) in view of Tabor *et al.* ('065) because of known advantages such as high shelf life, well known characteristics, cost and also because Rusche ('384) in view of Tabor *et al.* ('065) teach an adhesive, sizing solution, hence suggesting an epoxy.

7. Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rusche (US Patent No. 6,716,384 B2) in view of Tabor *et al.* (US Patent No. 6,989,065 B2) and in further view of Rossi (US Patent No. 4,562,031).

Rusche ('384) in view of Tabor *et al.* ('065) teach the basic claimed process as described above.

Regarding claims 11 and 16, although Rusche ('384) in view of Tabor *et al.* ('065) teach a urethane product, Rusche ('384) in view of Tabor *et al.* ('065) do not teach a durometer hardness of 70-A and 70-D. Rossi ('031) teaches that a urethane product for tires has a durometer of 90-A to 50-D (see col. 2, lines 63-66). Therefore, it would have been obvious for one of ordinary skill in the art to form a urethane product for tires having a durometer of 90-A to 50-D as taught by Rossi ('031) using the process of Rusche ('384) in view of Tabor *et al.* ('065) because, Rossi ('031) specifically teaches that a urethane product for tires has a durometer of 90-A to 50-D in order to function as described, hence providing for an improved product and also because, both Tabor *et al.* ('065) and Rossi ('031) teach similar materials and end-products, hence it is submitted that similar material properties are required for the end-products of Tabor *et al.* ('065) and Rossi ('031).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni, can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD



4/8/06

Primary Examiner

AU 1732

April 8, 2006